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Suggestions for the Destruction of the Melon Plant Louse.

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Last year the melon plant louse, *Aphis gossypii* appeared in considerable numbers in the sections of this state where the cantaloupe is grown for commercial purposes. In Washington County where the growing of cantaloupes is a comparatively new industry, the insect was very conspicuous and almost totally ruined some fields.

This insect is therefore of great importance and some growers are already making inquiry about it. Mr. Caleb Long of Boonsboro, writes me as follows:—"Will spraying with kerosene (coal oil) emulsion be practical for combating the striped beetle which attacks cantaloupe; and if so will it also destroy the melon aphis or louse, thus serving a double purpose. This latter pest is one of great importance to us in this section and we desire information".

A few general remarks will be necessary about this pest before we can discuss the remedy for its suppression and control.

The melon plant louse is remarkable in its mode of developement from the fact that the females produce living young. We also have exhibited here a striking case of parthenogenesis, that is, the production of young, generation after generation, without the intervention of the male. This is known as egamic reproduction or reproduction by budding. This

continues throughout the summer, when late in the fall the male is produced, fertilizes the female and eggs are laid which pass the winter. These eggs produce only females. They appear early in the spring, are winged, and are known as stem mothers, as shown in the illustration. She produces living young, all of which are females, no males appearing as indicated above until late fall. The young develop into either winged or wingless forms. It is not an uncommon thing to see the agamic mother walking around unconcernedly feeding, and at the same time giving birth to a young louse. The wingless forms are usually most numerous, and on account of their great fecundity provide for the increase of the progeny. This rapid multiplication would be disastrous to the species in consequence of the failure of the plant to supply the necessary food for so many individuals; thus it is, that the winged forms are produced in order to perpetuate the species as they migrate to other plants and start new colonies. It is also at the critical moment when a plant becomes overstocked with lice that ants are most active, carrying the delicate little wingless creatures, from place to place, establishing them where their favorite food supply is abundant.

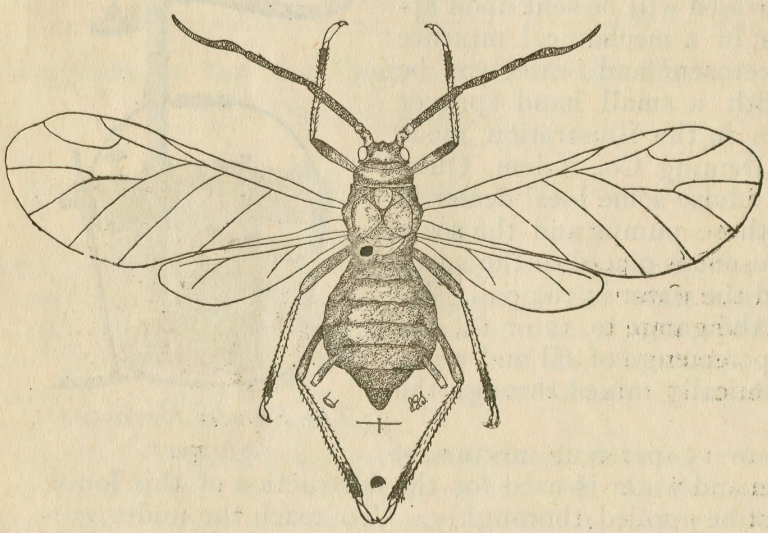
The relationship existing between ants and plant lice would be an interesting topic for discussion, but we cannot consider it at this time. Suffice it to say, that ants do not eat the lice; but care for them tenderly, for the honey dew they receive; very much in the same manner we protect and feed cows for the milk they furnish us in return. An ant will carry a louse a long distance in its jaws and establish it on a plant more favorable for food.

Plant lice do not eat the leaf, but suck the juices from within and have for that purpose a long, lance-like beak which they insert in the tissues of the plant. They cannot therefore, be destroyed with Paris green or any arsenical or other poison that is eaten.

The cantaloupe is not the only plant this insect feeds upon, as has been suspected by many persons. It has been found feeding upon no less than thirty species of plants, not including the melons, squashes, etc.; which seem to be favorites.

The list is too long to give in this circular; but it includes many common weeds, field and garden crops, hot-house plants and even some orchard and forest trees. From this wide

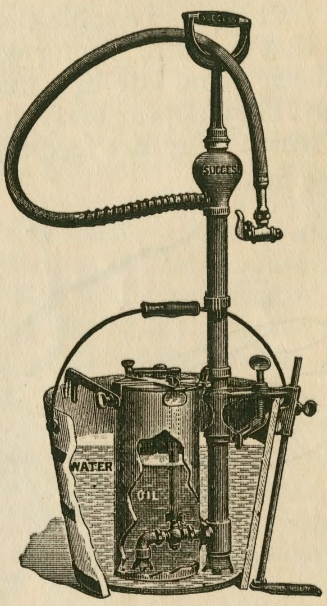
range of food we are led to believe that the insect can live upon almost any plant. Eggs of the species have been found on purslane in October and upon strawberry plants in January. It seems possible that the viviperous forms, that is, those that produce living young, live over winter, as they have been found late in January, even after heavy frost and snow. They appear early in the spring, overstock the plants upon which they are feeding, and then migrate to the cantaloupe field.



The Winged Form of the Melon Plant Louse.
(*After Smith*).

As soon as the first leaves of the melon are through the ground, a careful watch should be kept for the appearance of the lice. Do not wait until you see a dead or crumpled leaf before you are aware of their presence. Examine the under surface of the leaves at various places in the field at frequent intervals. Remember the louse is greenish and hard to see when only a few are clustered upon a leaf. The winged forms will be the first to be seen; while wingless females will appear later. Individual insects should be killed and if a leaf is found badly infested it should be plucked and destroyed. It can be buried 6 or 8 inches underground, crushed under foot, burned, or immersed in a pail containing water and a little kerosene.

If this pest gains a foothold in your fields, you should be prepared to combat it. This can best be done with a mixture of kerosene and water, or a solution of tobacco whale oil soap (Good's No. 6). It must be borne in mind that kerosene and water cannot be mixed with a spoon or paddle, or by stirring them together. An emulsion must be made as recommended in Bulletin 65, a copy of which will be sent upon application; or a mechanical mixture of the kerosene and water can be made with a small hand sprayer as shown in the illustration, made by the Deming Co., Salem, Ohio. I would advise some local dealer to handle these pumps and the soap. The kerosene is placed in the small tank and the water in the pail. By setting the gauge to 12 or 15, the proper percentage of oil and water is mechanically mixed through the nozzle.



The Success Kerosene Sprayer.

A 12 or 15 per cent mixture of kerosene and water is used for the destruction of this louse; but must be applied thoroughly. To reach the under surface of the leaves, use a brass elbow, costing about 25 cents, which can be attached to any nozzle connection. It can be bought with the pump. I would also use the vermorel nozzle.

The tobacco whale oil soap can also be used at the rate of one pound of soap dissolved in 8 to 10 gallons of warm water. It can be sprayed on the vines using the same little sprayer without the oil tank. The sprayer costs $8.00 complete with the oil tank or $5.50 without it. The whale oil soap is made by James Good, 939 North Front St., Philadelphia, Pa., and costs 3½ to 5 cents per pound depending on amount. It can de purchased in 50, 100 or 170 pound kegs or in 425 pound barrels. It will keep indefinately.

In the warfare against this pest I would advise growers to organize a systematic campaign against it and work together.